

Applicant(s): Joseph A. Perault et al.
U.S.S.N.: 10/784,121

REMARKS

In response to the Office action mailed December 29, 2004, Applicants respectfully request reconsideration. To further the prosecution of the application, claims 1, 5 and 8 are amended, and claim 11 is canceled. Accordingly, claims 1-10 and 12-15 remain pending, of which claims 1, 5, 8 and 14 are in independent form. The application as presented is believed to be in allowable condition.

The specification is amended to include the serial numbers of the patent applications identified on page 1, lines 4-11 as required in the Office action. Reconsideration of the objection to the specification is respectfully requested.

Claims 1, 4, 5, 8 and 13-15 are rejected in the Office action as being obvious and unpatentable under 35 U.S.C. §103(a) over Bennett et al. (U.S. Patent No. 6,036,787) in view of Foret (U.S. Patent No. 3,620,230). Claim 2 is rejected as being obvious and unpatentable under 35 U.S.C. §103(a) over Bennett et al. in view of Foret, and further in view of Doyle (U.S. Patent No. 5,918,544). And finally, claims 3, 6, 7 and 9-12 are rejected as being obvious and unpatentable under 35 U.S.C. §103(a) over Bennett et al. in view of Foret, and further in view of Hamasaki et al. (U.S. Patent No. 5,976,269).

As amended, claim 1 is directed to a vacuum plenum module of a stencil wiper assembly for wiping and removing excess material from a stencil of a stencil printer. The vacuum plenum module comprises:

a wiper blade to wipe the stencil;

a plenum chamber in fluid communication with the wiper blade, *the plenum chamber having an opening formed therein*; and

a vacuum generator attached to and in *direct* fluid communication with the plenum chamber to create a vacuum within the plenum chamber, *the vacuum generator having an opening proximate to the opening of the plenum chamber to provide the direct fluid communication between the vacuum generator and the plenum chamber.*

As asserted by the Examiner, Bennett et al. disclose a wiper blade to wipe the stencil, a material applicator to apply material on the stencil, and a plenum chamber in fluid communication with the wiper blade. Bennett et al. fail to disclose a vacuum generator attached to the plenum chamber. As shown, the vacuum generator disclosed in Bennett et al. is remotely

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located from the plenum chamber. The Examiner further asserts that Foret teaches means of generating a vacuum source creating a vacuum that communicates with a chamber. However, contrary to the Examiner's assertion, Foret teaches a vacuum pump (14) and a pneumatic valve (12) connected to the plenum chamber (17) by means of tubing (18'). There is no disclosure, showing or suggestion in both Bennett et al. and Foret of a vacuum generator having an opening proximate to an opening of the plenum chamber to provide the *direct* fluid communication between the vacuum generator and the plenum chamber as set forth in FIG. 1. Bennett et al. and Foret suffer from the same disadvantages associated with prior art systems in that such systems provide a pump mechanism for creating the vacuum (negative pressure) at the vacuum plenum by lines or hoses so as to create vacuum at several places along the length of the plenum. Locating the vacuum generator remote from the wiper system has several disadvantages, such as the need to run many hoses through the machinery in order to connect the vacuum generator to the wiper system, which may be clumsy and may increase possibilities of failure of the system. In addition, each hose needs to be protected to avoid any bending or compression that could disrupt the airflow, thus the hoses are typically installed in metal casings in areas where crimping may occur to protect them. This results in a large amount of space being needed to run the several hoses to the vacuum plenum assembly and increased costs associated with the hoses and the protective casings.

Accordingly, claim 1 is submitted as being patentable for the reasons set forth above. Reconsideration is respectfully requested.

Claims 2-4, which depend directly or indirectly from claim 1, are patentable for at least the same reasons as claim 1. In addition, with respect to claim 2, the Examiner asserts that Doyle teaches the introduction of pressurized solvent into the system. However, claim 2 is directed to the provision of means for introducing pressurized fluid (e.g., air) into the vacuum generator. Doyle does not disclose, show or suggest this claimed feature.

Independent claims 5 and 8 are amended to include the limitations added to claim 1, and are therefore submitted as patentable for the same reasons given for claim 1. Claims 6 and 7 and claims 9-13, which depend directly or indirectly from claims claim 5 and claim 8, respectively, are submitted as being patentable for at least the same reasons as claims 5 and 8.

In addition, with respect to claim 12, the Examiner asserts that Bennett et al. teach the provision of a seal disposed between the plenum chamber and the chamber of the vacuum generator. Bennett et al. disclose an outlet tube (17) that connects the vacuum source (remotely located from the vacuum channel) to the vacuum channel. There is no teaching in Bennett et al. of a seal as defined in claim 12.

Claim 14 is directed to a method of cleaning a stencil of a stencil printer comprising a stencil wiper assembly having a vacuum plenum. The method comprises:

- loading substrate into the stencil printer;
- dispensing material onto the substrate through the stencil;
- cleaning the stencil with the vacuum plenum of the stencil wiper assembly; and
- generating a vacuum *directly* at the vacuum plenum to create a vacuum within the vacuum plenum.

All of the references relied on by the Examiner, including Bennett et al., Foret, Doyle and Hamasaki et al., fail to disclose, show or suggest a method having a vacuum generated directly at the vacuum plenum. As discussed above, when remotely generating the vacuum, several lines (or hoses) are required, the lines being connected to the plenum along the length of the plenum. The method of the present invention enables the vacuum source to be created at the plenum. This method is not taught by the prior art of record.

Accordingly, claim 14 is submitted as being non-obvious and patentable.

In addition to the reasons set forth for claim 14, claim 15, which depends from claim 14, defines patentably over Bennett et al. and Foret in that neither reference discloses the method steps of delivering pressurized fluid (e.g., air) to the vacuum plenum, and manipulating the pressurized fluid to create the vacuum. Bennett et al. teach the well-known method of locating the vacuum source in a remote location from the plenum. Pipe (17) connects the vacuum channel to the vacuum source. Similarly, Foret discloses connecting the vacuum source to the vacuum chamber by tubing (18').

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CONCLUSION

Based on the foregoing, the application is believed to be in allowable condition and a notice to that effect is respectfully requested. If the Examiner has any questions regarding the application, he is invited to contact the Applicants' Attorney at the number provided below.

Respectfully submitted,



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